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Mark G Bocchetti Eastman Kodak Company 343 State Street Rochester, NY 14650-2201			ART UNIT 1762	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,282

Applicant(s)

CALENDINE ET AL.

Examiner

Katherine A. Bareford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
4a) Of the above claim(s) 23-30 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 and 31 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/03, 1/05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species 1 (claims 1-16 and 18) in the reply filed on March 7, 2005 is acknowledged. The traversal is on the ground(s) that the species all deal with different methods of adding material to a product roller, and that a complete search on the invention would necessarily be coextensive with the search of any of the species, and therefore, in the interest of compact prosecution it is urged that the species election be reconsidered and withdrawn. This is not found persuasive because distinct species are provided as discussed in the restriction requirement of Feb. 11, 2005. As a result, if all species were searched, each piece of art reviewed would have to be considered under several different standards, one for each of the different species. This would provide a serious burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 23-³⁰~~31~~ are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on March 7, 2005.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12, 14, 18 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12, lines 2-3, "the gravure roller" should be "the application roller" to correspond to the usage of parent claim 11. There is no usage of the term "gravure roller" in parent claim 11. For the purposes of examination, the claim has been treated as referring to "the application roller".

Claim 18, lines 2-3, "the gravure roller" lacks antecedent basis. Parent claim 17 requires no usage of any application or gravure roller in the claim. For the purposes of examination, the claim has been treated as requiring an application roller to apply the coating to the product roller.

Claim 31, last line "exterior o the product" should apparently be "exterior of the product" for grammatical clarity.

The other dependent claim does not cure the defect of the claim from which it depends.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 17, 18 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Okazaki et al (US 5328735).

Okazaki teaches a method for coating an outer surface of a product roller for an electrophotographic process with a coating of a surface modifying material. Column 1, lines 5-10 and column 1, line 60 through column 2, line 15. The coating can be seamless. Column 5, lines 1-20 (coating thickness difference over the roller is minimized, thus producing a uniform or "seamless" coating). The product roller is rotated. Figure 1 and column 5, line 60 through column 6, line 10. A mixture containing the surface modifying material is applied to the outer surface of the product roller at a controlled rate. Figure 1 and column 5, line 60 through column 6, line 10.

Claim 18: the transfer of the mixture to the product roller is continued by continuation application of the surface modifying material to an application roller and continuing rotation of the product roller until a selected quantity of the surface modifying material has been transferred to the outer surface of the product roller. Figure 1 and column 5, line 60 through column 6, line 10.

Claim 22: the mixture can contain water. Column2, lines 25-30.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 19-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki as applied to claims 17, 18 and 22 above, and further in view of Carmichael et al (US 6410196).

Okazaki teaches all the features of these claims except the use of a volatile solvent. Okazaki teaches that the specific surface modifying material can be a tetrafluoroethylene as required by claim 20. See column 2, lines 20-25.

However, Carmichael teaches applying coating layers to a photoreceptor used in electrophotography. Column 1, lines 5-10. The substrate can be in the form of a drum

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(roller). Column 7, lines 15-25. Various coating layers can be applied, including charge transport layers, adhesive layers, photogenerating layers, etc. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. These layers can all be applied by roller coating methods. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. The charge transport layers can include materials such as PTFE. Column 4, lines 55-60. The charge transport layer can include solvents such as tetrahydrofuran or toluene. Column 5, lines 5-10. The adhesive layer can include various organic solvents, such as tetrahydrofuran, toluene, hexane, etc. Column 9, lines 25-35. The photogenerating layer can also use various organic solvents. Column 11, lines 15-20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Okazaki to use an organic solvent as taught by Carmichael with an expectation of desirable coating results, because Okazaki teaches to use a liquid dispersion for coating, and Carmichael teaches that when coating roller surfaces for electrophotography processes, it is well known to use organic solvents to form coating solutions which can contain PTFE particles for coating roller surfaces.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki in view of Carmichael as applied to claims 19-20 above, and further in view of EP 1 158 365 A1 (hereinafter '365).

Okazaki in view of Carmichael teaches all the features of these claims except the ketone solvent (claim 21) and the use of water and organic solvent (claim 22).

'365 teaches a method of coating a product roller. Paragraph [0001]. The product roller is coated by a roller coating method. Paragraph [0016]. The coating (application) roller can be a gravure roll. Paragraph [0022]. To perform the coating a mixture containing surface modifying coating material is applied to a rotatable coating roller. Paragraphs [0016], [0035] and [0036]. The coating can be provided using a bath of the coating material. Paragraph [0035]. The product roller is rotated. Paragraphs [0016], [0035], [0036]. Then the coating roller is rotated in mixture transferring contact with the product roller to transfer at least a portion of the mixture to the product roller. Paragraphs [0016], [0036]. The transfer of the mixture to the product roller is continued by continuing application of the surface modifying material to the coating roller and continuing rotation of the product roller until a selected quantity of surface modifying mixture has been transferred to the outer surface of the product roller. Paragraphs [0016], [0035]. The uniformity, and thus seamlessness, of the coating can be controlled. Paragraph [0018]. Various coating materials can be used, and then can be provided as soluble in various conventional solvents, such as water, alcohol, esters, ketones, hydrocarbons, or mixtures thereof can be used. Paragraphs [0032]–[0033].

It is the Examiner's position that it is well known in the solvent art for ketone solvents to have a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C. If applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Okazaki in view of Carmichael to use a ketone solvent

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or organic solvents blended with water as taught by '365 with an expectation of desirable coating results, because Okazaki in view of Carmichael teaches to use various liquids that can include solvents to coat electrophotographic rollers by roll coating methods, and '365 teaches that when coating rollers using a roll coating process, conventional solvents for the various coating liquids can include ketone solvents^{or}_{of}¹ mixtures of organic solvents and water. It would further have been obvious to modify Okazaki in view of Carmichael and '365 to use a ketone with a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C with an expectation of providing a desirable coating mixture, because '365 teaches the conventional use^{of}_{of} ketone solvents and it is well known that ketone solvents can desirably have a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C.

11. Claims 1, 2, 4, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki et al (US 5328735) in view of EP 1 158 365 A1 (hereinafter '365).

Okazaki teaches a method for coating an outer surface of a product roller for an electrophotographic process with a coating of a surface modifying material. Column 1, lines 5-10 and column 1, line 60 through column 2, line 15. The coating can be seamless. Column 5, lines 1-20 (coating thickness difference over the roller is minimized, thus producing a uniform or "seamless" coating). A mixture containing the surface modifying material is applied to a rotatable transfer (application) roller. Column 5, line 60 through column 6, line 10. The product roller (core) is rotated. Figure 1 and column

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5, line 60 through column 6, line 10. The transfer roller is rotated in mixture transferring contact with the product roller transferring at least a portion of the mixture to the product roller. Figure 1 and column 5, line 60 through column 6, line 10.

Claim 18: the transfer of the mixture to the product roller is continued by continuation application of the surface modifying material to the transfer roller and continuing rotation of the product roller until a selected quantity of the surface modifying material has been transferred to the outer surface of the product roller.

Figure 1 and column 5, line 60 through column 6, line 10.

Claim 4: the surface modifying material can be tetrafluoroethylene. Column 2, lines 20-25.

Claim 6: the mixture can contain water. Column 2, lines 25-30.

Claim 7: the mixture can be applied to the transfer roller by immersing a portion of the transfer roller in the mixture. Figure 1 and column 2, lines 1-10.

Claim 9: the product roller can be a fuser (fixing) roller. Column 1, lines 5-10.

Okazaki teaches all the features of these claims except that the transfer roller is a gravure roller.

'365 teaches a method of coating a product roller. Paragraph [0001]. The product roller is coated by a roller coating method. Paragraph [0016]. The coating (application) roller can be a gravure roll. Paragraph [0022]. To perform the coating a mixture containing surface modifying coating material is applied to a rotatable coating roller. Paragraphs [0016], [0035] and [0036]. The coating can be provided using a bath of the

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coating material. Paragraph [0035]. The product roller is rotated. Paragraphs [0016], [0035], [0036]. Then the coating roller is rotated in mixture transferring contact with the product roller to transfer at least a portion of the mixture to the product roller.

Paragraphs [0016], [0036]. The transfer of the mixture to the product roller is continued by continuing application of the surface modifying material to the coating roller and continuing rotation of the product roller until a selected quantity of surface modifying mixture has been transferred to the outer surface of the product roller. Paragraphs [0016], [0035]. The uniformity, and thus seamlessness, of the coating can be controlled. Paragraph [0018]. Various coating materials can be used, and then can be provided as soluble in various conventional solvents, such as water, alcohol, esters, ketones, hydrocarbons, or mixtures thereof can be used. Paragraphs [0032]--[0033].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Okazaki to use a gravure roller as taught by '365 with an expectation of desirable coating results, because Okazaki to coat electrophotographic rollers by roll coating methods, and '365 teaches that when coating rollers using a roll coating process, it is desirable to use gravure roller to coat the product roller.

12. Claims 1-7, 9 and 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al (US 6410196) in view of EP 1 158 365 A1 (hereinafter '365).

Claims 1, 17: Carmichael teaches applying coating layers to a photoreceptor used in electrophotography. Column 1, lines 5-10. The substrate can be in the form of a drum

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(roller). Column 7, lines 15-25. Various coating layers can be applied, including charge transport layers, adhesive layers, photogenerating layers, etc. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. These layers can all be applied by roller coating methods. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. The charge transport layers can include materials such as PTFE. Column 4, lines 55-60.

Claims 3, 19: The charge transport layer can include solvents such as tetrahydrofuran or toluene. Column 5, lines 5-10. The adhesive layer can include various organic solvents, such as tetrahydrofuran, toluene, hexane, etc. Column 9, lines 25-35. The photogenerating layer can also use various organic solvents. Column 11, lines 15-20.

Claims 4, 20: the surface modifying material can be a polytetrafluoroethylene. Column 4, lines 55-60.

Claim 9: the product roller can be a primary charge roller, a photoreceptor. Column 1, lines 5-10.

Carmichael teaches all the features of these claims except that (1) the roller application process with gravure roller, (2) providing a seamless coating (3) the specific surface modifying material (claims 4, 20), (4) the ketone solvent (claims 5, 21), (5) the mixture of water and organic solvent (claims 6,21).

'365 teaches a method of coating a product roller. Paragraph [0001]. The product roller is coated by a roller coating method. Paragraph [0016]. The coating (application) roller can be a gravure roll. Paragraph [0022]. To perform the coating a mixture

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containing surface modifying coating material is applied to a rotatable coating roller.

Paragraphs [0016], [0035] and [0036]. The coating can be provided using a bath of the coating material. Paragraph [0035]. The product roller is rotated. Paragraphs [0016], [0035], [0036]. Then the coating roller is rotated in mixture transferring contact with the product roller to transfer at least a portion of the mixture to the product roller.

Paragraphs [0016], [0036]. The transfer of the mixture to the product roller is continued by continuing application of the surface modifying material to the coating roller and continuing rotation of the product roller until a selected quantity of surface modifying mixture has been transferred to the outer surface of the product roller. Paragraphs [0016], [0035]. The uniformity, and thus seamlessness, of the coating can be controlled. Paragraph [0018]. Various coating materials can be used, and then can be provided as soluble in various conventional solvents, such as water, alcohol, esters, ketones, hydrocarbons, or mixtures thereof can be used. Paragraphs [0032]--[0033].

It is the Examiner's position that it is well known in the solvent art for ketone solvents to have a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C. It is also the Examiner's position that polyvinylidene fluoride and fluorinated ethylene-propylene resins are well known fluorine polymers for prevent friction problems. If applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carmichael to use a gravure roller application process as taught by '365 with an expectation of desirable coating results, because Carmichael

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teaches to coat electrophotographic rollers by roll coating methods, and '365 teaches that when coating rollers using a roll coating process, it is desirable to use a gravure roller coating process to coat the product roller. It further would have been obvious to modify Carmichael in view of '365 to provide a seamless coating in order to provide a desirable electrophotographic roller, because a uniformly coated roller would provide for uniform results from the charge generating and '365 teaches to control to make the applied coating uniform. It would further have been obvious to use various well known fluorine polymers, such as polyvinylidene fluoride, in the process of Carmichael in view of '365 with an expectation of desirable results, because Carmichael teaches to use PTFE particles, and other well known fluorine polymers are known to have similar friction preventing results. It would further have been obvious to modify Carmichael to use a ketone solvent or organic solvents blended with water as taught by '365 with an expectation of desirable coating results, because Carmichael teaches to use various liquids that can include solvents to coat electrophotographic rollers by roll coating methods, and '365 teaches that when coating rollers using a roll coating process, conventional solvents for the various coating liquids can include ketone solvents ^{OR} ~~of~~ _^ mixtures of organic solvents and water. It would further have been obvious to modify Carmichael in view of '365 to use a ketone with a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C with an expectation of providing a desirable coating mixture, because '365 teaches the conventional use ^{of} _^ ketone solvents

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and it is well known that ketone solvents can desirably have a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C.

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael in view of '365 as applied to claims 1-7, 9 and 17-22 above, and further in view of Johnston II (US 3649358).

Carmichael in view of '365 teaches all the features of this claim except spraying the mixture on the gravure roller.

However, Johnston teaches that when performing a gravure coating process, it is well known to spray coating onto a gravure roller, whereby the spray applied coating is transferred from the gravure roll to the product to be coated. Figure 1 and column 3, lines 30-50.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carmichael in view of '365 to spray the coating onto the gravure roller as taught by Johnston with an expectation of desirable coating results, because Carmichael in view of '365 teaches to coat electrophotographic rollers by roll coating methods including gravure roll methods, and Johnston teaches that when using a gravure coating process it is well known to apply the coatings to the gravure rollers by spray coating.

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14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael in view of '365 as applied to claims 1-7, 9 and 17-22 above, and further in view of Wittkopf (US 4615295).

Carmichael in view of '365 teaches all the features of this claim except the intermediate transfer roller

However, Wittkopf teaches that when performing a gravure coating process, it is well known to apply coating to a gravure roll and then either apply coating directly to the product substrate or to apply the coating from the gravure roll to a transfer roll that then transfers the coating to the product substrate. See column 2, lines 35-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carmichael in view of '365 to use a transfer roll system as taught by Wittkopf with an expectation of desirable coating results, because Carmichael in view of '365 teaches to coat electrophotographic rollers by roll coating methods including gravure roll methods, and Wittkopf teaches that when using a gravure coating process it is well known to apply the coatings to the gravure rollers and then from the gravure to a transfer roll that then coats the product substrate.

15. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al (US 6410196) in view of Piacente et al (5178912).

Claim 11: Carmichael teaches applying coating layers to a photoreceptor used in electrophotography. Column 1, lines 5-10. The substrate can be in the form of a drum

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(roller). Column 7, lines 15-25. Various coating layers can be applied, including charge transport layers, adhesive layers, photogenerating layers, etc. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. These layers can all be applied by roller coating methods. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. The charge transport layers can include materials such as PTFE. Column 4, lines 55-60.

Claim 13: The charge transport layer can include solvents such as tetrahydrofuran or toluene. Column 5, lines 5-10. The adhesive layer can include various organic solvents, such as tetrahydrofuran, toluene, hexane, etc. Column 9, lines 25-35. The photogenerating layer can also use various organic solvents. Column 11, lines 15-20.

Claim 14: the surface modifying material can be a polytetrafluoroethylene. Column 4, lines 55-60.

Carmichael teaches all the features of these claims except that (1) the roller application process with the metering and application rollers, (2) providing a seamless coating (3) the specific surface modifying material (claim 14).

However, Piacente teaches a roller coating method for coating the outer surface of a product substrate. Figure 1 and column 9, lines 1-15. A substrate is provided in transfer contact with a application roller having a central axis and an outer surface. Figure 1 and column 9, lines 15-60 (roll 19). The application roller is rotated. Figure 1 and column 9, lines 15-60. The substrate passes over a rotating backing roll. Figure 1 and column 9, lines 45-55. A metering roller having a central axis and an outer surface

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is provided. Figure 1 and column 9, lines 15-60 (roll 18). The central axis of the metering roller is above and horizontally displaced ^{from} ~~form~~ the central axis of the application roller so that a coating reservoir space is formed between the metering and application rollers. Figure 1 and column 9, lines 15-60 (pool 17). A selected spacing is present between the outer surfaces of the application and metering rollers. Figure 1 and column 9, lines 45-55. The metering roller is rotated in an opposite direction of the rotation of the application roller to position a selected quantity of the coating mixture on the outer surface of the application roller so that at least a portion of the coating mixture is transferred to the product substrate. Figure 1 and column 9, lines 45-50. Transfer of coating continues until a selected amount has been applied. Figure 1 and column 9, lines 15-60.

It is the Examiner's position that polyvinylidene fluoride and fluorinated ethylene-propylene resins are well known fluorine polymers for prevent friction problems. If applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carmichael to use a reverse roller application process as taught by Piacente with an expectation of desirable coating results, because Carmichael teaches to coat electrophotographic rollers by roll coating methods, and Piacente teaches a desirable roll coating process for applying metered coatings is a reverse roll process. It further would have been obvious to modify Carmichael in view of '365 to provide a seamless coating in order to provide a desirable electrophotographic roller, because a

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uniformly coated roller would provide for uniform results from the charge generating and Piacente teaches to use metering to control the amount of coating on the application roller. It would further have been obvious to use various well known fluorine polymers, such as polyvinylidene fluoride, in the process of Carmichael in view of Piacente with an expectation of desirable results, because Carmichael teaches to use PTFE particles, and other well known fluorine polymers are known to have similar friction preventing results.

16. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael in view of Piacente as applied to claims 11-14 above, and further in view of EP 1 158 365 A1 (hereinafter '365).

Carmichael in view of Piacente teaches all the features of these claims except (1) the ketone solvent and (2) the water and organic solvent.

'365 teaches a method of coating a product roller. Paragraph [0001]. The product roller is coated by a roller coating method. Paragraph [0016]. The coating (application) roller can be a gravure roll. Paragraph [0022]. To perform the coating a mixture containing surface modifying coating material is applied to a rotatable coating roller. Paragraphs [0016], [0035] and [0036]. The coating can be provided using a bath of the coating material. Paragraph [0035]. The product roller is rotated. Paragraphs [0016], [0035], [0036]. Then the coating roller is rotated in mixture transferring contact with the product roller to transfer at least a portion of the mixture to the product roller.

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Paragraphs [0016], [0036]. The transfer of the mixture to the product roller is continued by continuing application of the surface modifying material to the coating roller and continuing rotation of the product roller until a selected quantity of surface modifying mixture has been transferred to the outer surface of the product roller. Paragraphs [0016], [0035]. The uniformity, and thus seamlessness, of the coating can be controlled. Paragraph [0018]. Various coating materials can be used, and then can be provided as soluble in various conventional solvents, such as water, alcohol, esters, ketones, hydrocarbons, or mixtures thereof can be used. Paragraphs [0032]--[0033].

It is the Examiner's position that it is well known in the solvent art for ketone solvents to have a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C. If applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carmichael in view of Piacente to use a ketone solvent or organic solvents blended with water as taught by '365 with an expectation of desirable coating results, because Carmichael teaches to use various liquids that can include solvents to coat electrophotographic rollers by roll coating methods, and '365 teaches that when coating rollers using a roll coating process, conventional solvents for the various coating liquids can include ketone solvents ^{or} ~~of~~ mixtures of organic solvents and water. It would further have been obvious to modify Carmichael in view of Piacente and '365 to use a ketone with a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C with an expectation of providing a desirable

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coating mixture, because '365 teaches the conventional use^{of} ketone solvents and it is well known that ketone solvents can desirably have a boiling point at standard atmospheric pressure from about 50 to about 160 degrees C.

17. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al (US 6410196).

Carmichael teaches applying coating layers to a photoreceptor used in electrophotography. Column 1, lines 5-10. The substrate can be in the form of a drum (roller). Column 7, lines 15-25. Various coating layers can be applied, including charge transport layers, adhesive layers, photogenerating layers, etc. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. These layers can all be applied by roller coating methods. Column 5, lines 35-50, column 9, lines 15-45, column 11, lines 5-25. The charge transport layers can include materials such as PTFE. Column 4, lines 55-60. The charge transport layer can include solvents such as tetrahydrofuran or toluene. Column 5, lines 5-10. The adhesive layer can include various organic solvents, such as tetrahydrofuran, toluene, hexane, etc. Column 9, lines 25-35. The photogenerating layer can also use various organic solvents. Column 11, lines 15-20.

Carmichael teaches all the features of these claims except the seamless coating and that a subsequent coating is applied prior to drying of the first coating

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carmichael to provide a seamless coating in order to

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provide a desirable electrophotographic roller, because a uniformly coated roller would provide for uniform results from the charge generating. It would further have been obvious to modify Carmichael to provide a subsequent layer prior to drying the first layer to provide for a quick and efficient coating process, because Carmichael provides multiple layers and does not indicate that the first layer must be dried before applying the next layer.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER